

REMARKS

Claims 1 – 15 are pending in the application. Applicant amends claim 15. No new matter is introduced.

OBJECTION TO DRAWING

Figures 2 and 10 of the drawing are objected to for failing to fully illustrate the element identified by reference index 100. Applicant proposes associated revisions to Figures 2 and 10 to address this objection as indicated in the attached drawing replacement pages, provided in both marked-up and clean copies. Applicants respectfully request that the proposed revisions be accepted, and that the objections be withdrawn.

OBJECTION TO CLAIMS, SPECIFICATION

Claim 3 and Applicant's specification are objected to with regard to the claim term "multiplying the total value of the data lengths for the predetermined number of packets divided by the total value of communication time intervals for them by a predetermined value of less than 1." The Examiner submits that this claim term is not defined in the specification. Applicant respectfully disagrees. For example, at page 17, line 26 through page 18, line 4 of Applicant's specification, a minimum cell rate is determined as a total value of data for received packets divided by a total communication time interval, and this quotient is then multiplied by a predetermined value of less than 1. Accordingly, Applicant respectfully requests that these objections be withdrawn.

REJECTIONS UNDER 35 U.S.C. §§ 102, 103

Claim 1 is rejected under 35 U.S.C. § 102(e) as being anticipated by Chiussi et al. (U.S. 6,075,791). Claims 2 and 3 are rejected under 35 U.S.C. § 103(a) as being unpatentable over

Chiussi '791 in view of Chiussi et al. (U.S. 6,654,345). Claims 4-7 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Chiussi '791 in view of Marin et al. (U.S. 6,088,734). Claim 15 is rejected under 35 U.S.C. § 102(e) as being anticipated by Gemar et al. (U.S. 6,483,839). Claims 8-11 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Chiussi '791 in view of Marin and further in view of Gemar. Applicant amend claim 15 to essentially incorporate the limitations of current claim 5, and respectfully traverses this rejection.

In independent claim 1, Applicant claims:

1. A relay apparatus comprising:

packet receiving unit for receiving an input packet;

data length detecting unit for detecting the data length of the packet received by the receiving unit;

time interval detecting unit for detecting the communication time interval of the packet received by said packet receiving unit; and

band setting unit for setting the communication band of a channel for sending out the packet received by said packet receiving unit, based on the data length detected by said data length detecting unit and the communication time interval detected by said time interval detecting unit.

Chiussi '791 discloses a system for guaranteeing data rates in packet networks by generating a timestamp for each packet waiting in one of a plurality of transmission connection queues, and selecting a packet from a queue for transmission where the selected packet has a smallest timestamp value (see, e.g., abstract and column 5, line 20 through column 6, line 27 of Chiussi '791). The timestamp values are generated as a function of system parameters including (a) the number of queues that are backlogged, (b) the data transfer rate guaranteed to each connection, (c) the sum of data transfer rates guaranteed to all backlogged connections, (d) the previous timestamp of the connection, and (e) the weighted sum of the timestamps of all backlogged connections, each timestamp weighted by the data transfer rate guaranteed to the corresponding connection.

In sharp contrast to Applicant's invention as claimed in claim 1, Chiussi '791 fails to disclose or suggest a band setting unit for setting the communication band of a channel based on a data length detected by a data length detecting unit and a communication time interval detected by a time interval detecting unit. In other words, unlike Applicant's claim 1, Chiussi '791 fails to teach setting a communication band based on a time interval determined by counting a number of packets that were received over a predetermined time period (see, e.g., page 12, line 24 through page 15, line 15 of Applicant's specification). As a result, Applicant respectfully submits that claim 1 is not anticipated by Chiussi '791, and stands in condition for allowance.

In amended independent claim 15, Applicant claims:

15. A relay apparatus for use in a network for transmitting variable length data using a fixed length packet, wherein a first IP packet having a strict requirement for real time, and a second IP packet having a less strict requirement for real time are both allocated to a communication band, the communication band being allocated based on a data length and a communication time interval corresponding to the first packet.

Gemar discloses a traffic scheduler in an ATM transmission system (see, e.g., abstract of Gemar). While Gemar discloses a scheduler providing a guaranteed frame rate (see, e.g., column 4, lines 36 – 50 of Gemar), unlike Applicant's claimed invention, Gemar makes no explicit or even suggested reference to allocating a communication band for a first IP packet having a strict requirement for real time and a second IP packet having a less strict requirement for real time, based on a data length and a communication time interval corresponding to the first packet. Accordingly, Applicant respectfully submits that amended independent claim 15 is not anticipated by Gemar, and therefore stands in condition for allowance.

As amended claim 15 effectively incorporates the limitations of claim 5, Applicant notes that claim 5 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over Chiussi '791 in view of Marin. With respect to claim 15, Applicant repeats his arguments as made with respect to claim 1 that Chiussi '791 fails to disclose or suggest allocating a communication band

based on a data length detected by a data length detecting unit and a communication time interval detected by a time interval detecting unit.

Marin discloses a scheduling method for ATM systems (see, e.g., abstract of Marin). The method of Marin includes the steps of: a) associating a timestamp value with each cell as it is received by the ATM node, b) grouping received cells into a plurality of cell groups in timestamp order based upon delay class characteristics of the cells, and c) selecting cells from each group so as to transmit the cells in earliest deadline first order (see, e.g., claim 1 of Marin). Unlike Applicant's claimed invention, Marin fails to teach or suggest allocating a communication band for a first IP packet having a strict requirement for real time and a second IP packet having a less strict requirement for real time, based on a data length and a communication time interval corresponding to the first packet. Rather, as indicated for example at column 9, lines 17 – 55 of Marin, Marin teaches establishing communication bands (connections) each associated with a single requirement (delay class). Accordingly, Applicant respectfully submits that claim 15 is not made obvious by the combination of Chiussi '791 and Marin.

As claims 2 – 14 depend from allowable claim 1, Applicant submits that claims 2 – 14 are allowable for at least this reason.

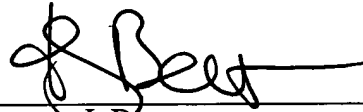
CONCLUSION

An earnest effort has been made to be fully responsive to the Examiner's objections. In view of the above amendments and remarks, it is believed that claims 1 – 15, consisting of independent claims 1 and 15, and the claims dependent therefrom, are in condition for allowance. Passage of this case to allowance is earnestly solicited. However, if for any reason the Examiner should consider this application not to be in condition for allowance, he is

respectfully requested to telephone the undersigned attorney at the number listed below prior to issuing a further Action.

Any fee due with this paper may be charged on Deposit Account 50-1290.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "T. Bean", written over a horizontal line.

Thomas J. Bean
Reg. No. 44,528

CUSTOMER NUMBER 026304

Katten Muchin Zavis Rosenman
575 Madison Avenue
New York, NY 10022-2585
(212) 940-8729
Docket No.: FUJG 17.913 (100794-11532)
TJB:pm

FIG. 2

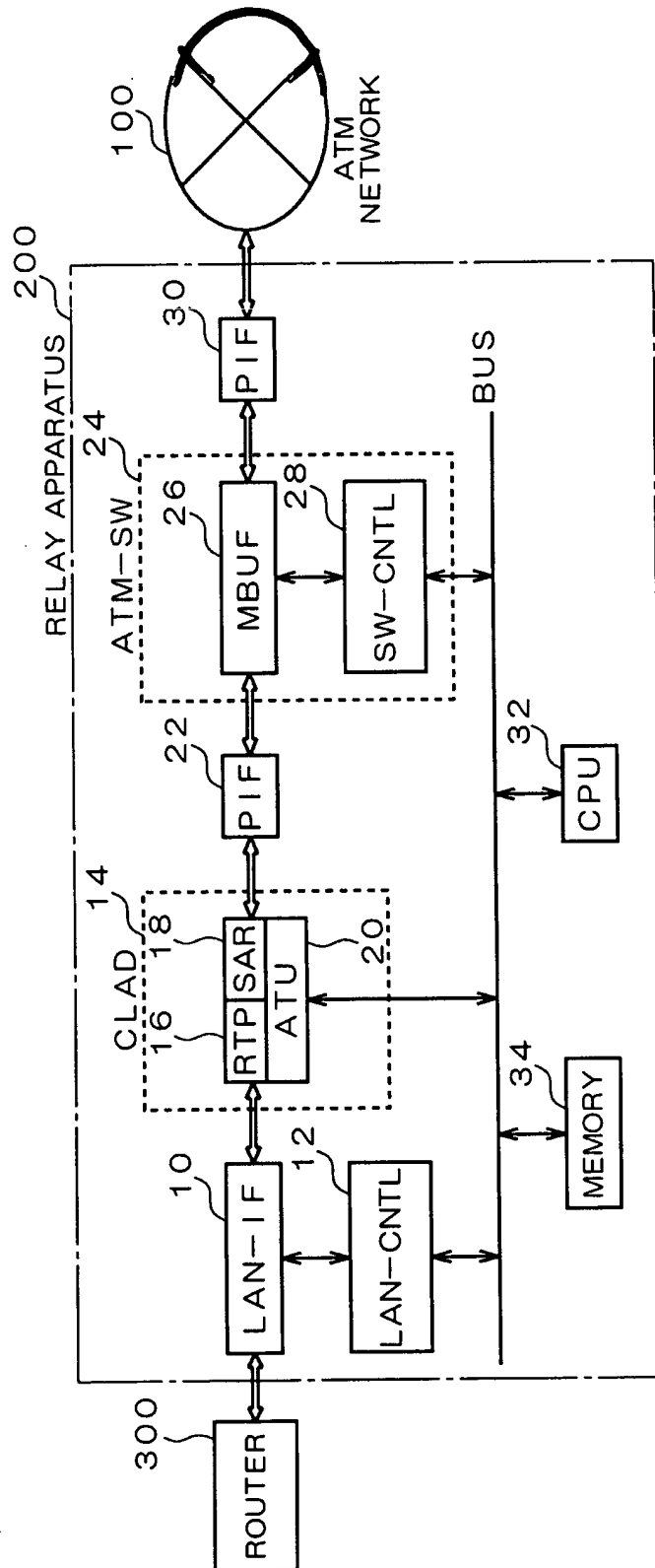
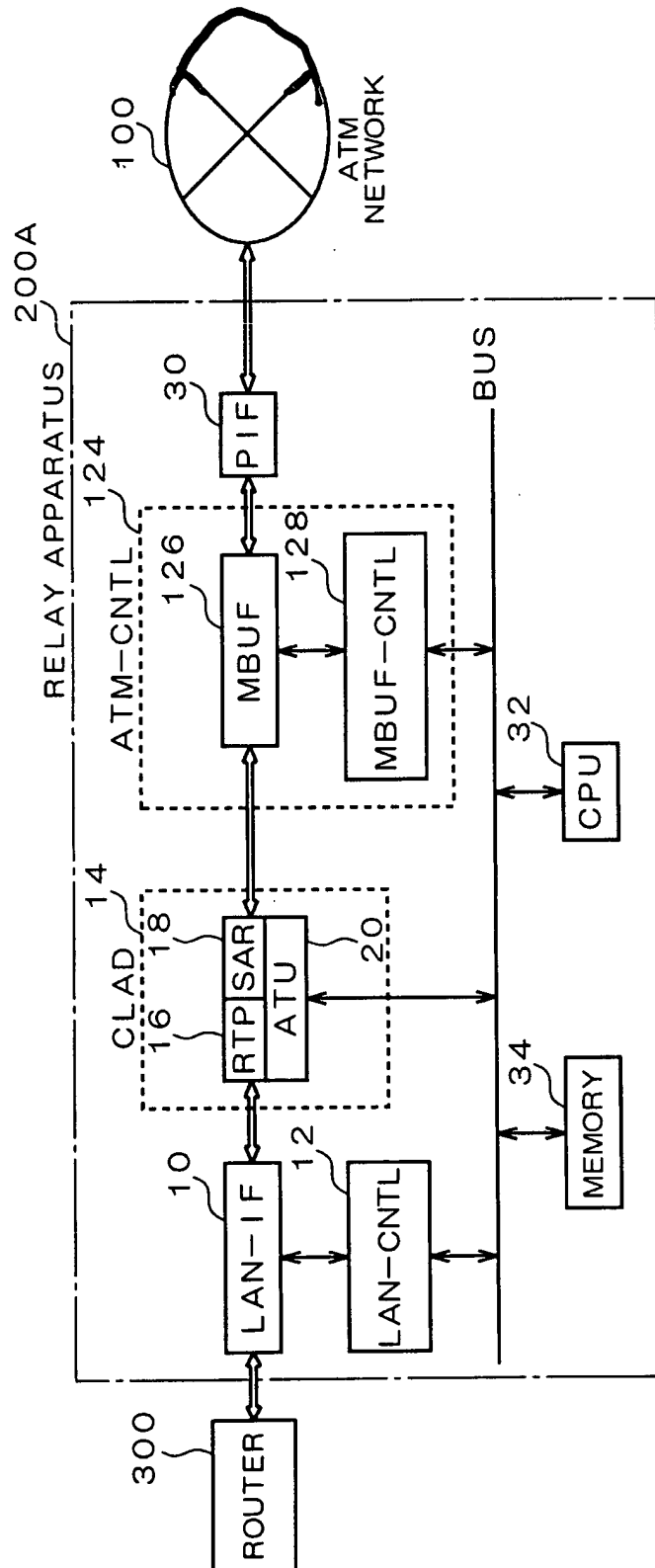
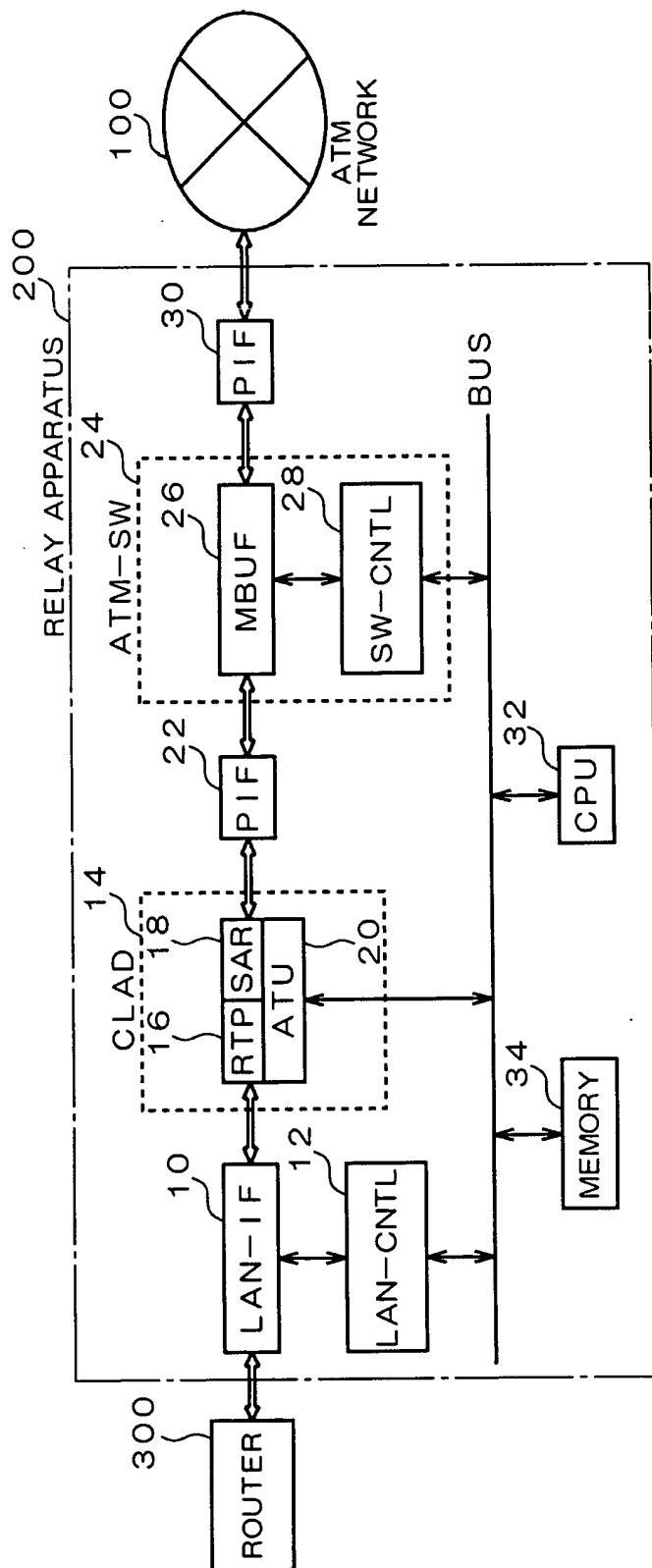


FIG. 10



(Replacement Sheet)

FIG. 2



(Replacement Sheet)

FIG. 10

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